



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,616	04/02/2004	Michael D. Durham	3791-30	2481
22442	7590	10/25/2006		
SHERIDAN ROSS PC 1560 BROADWAY SUITE 1200 DENVER, CO 80202				
EXAMINER LAWRENCE JR, FRANK M				
ART UNIT			PAPER NUMBER	
1724				

DATE MAILED: 10/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/817,616

Applicant(s)

DURHAM ET AL.

Examiner

Frank M. Lawrence

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 28-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-32 and 34-36 is/are allowed.
- 6) ☒ Claim(s) 1-18 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 148 (applicant attempted to correct this but amended the wrong line). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

2. Claim 2 objected to under 37 CFR 1.75 as being a substantial duplicate of claim 8. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). One of the claims should be canceled.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1724

4. Claim 33 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 33 is indefinite because it depends from itself. The claim should be amended to depend from claim 32.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pennline et al. '021 taken together with Bhat et al. '323, and further in view of Mazurkiewicz '649.

7. Pennline et al. '021 teach a system for removing mercury from a combusted fuel gas, comprising reducing the size of an activated coal sorbent in a grinder (50), injecting the ground sorbent into the contaminated exhaust stream, optionally storing the sorbent before injection, and separating particles from the stream in a filter or separator (34) (see figure 1, col. 3, line 31 to col. 4, line 66). The limitations to particle size reduction and time between method steps in claims 15 and 16 do not further limit the recited structure of the parent claims.

8. The claims differ from the disclosure of Pennline et al. '021 in that there is a preferred time between the comminution and introducing steps, that there is a preferred size and reduction factor of the sorbent, that there are a plurality of nozzles distributed through the gas stream for introducing comminuted sorbent, and that the comminution device is a jet mill or uses a high velocity stream and impaction to effect size reduction.

Art Unit: 1724

9. Bhat et al. '323 disclose a flue gas treatment system comprising a plurality of nozzles (34, 42, 46) for introducing sorbent particles throughout the contaminated gas stream (see figure 1, col. 2, lines 39-67). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the device of either one of Pennline et al. '021 by using a plurality of nozzles in order to provide a means to evenly distribute sorbent in the waste stream to result in a higher contaminant removal.

10. Mazurkiewicz '649 discloses a high-pressure mill for reducing the size of particles such as coal by using a high-velocity stream and impaction with a collider (see abstract, col. 1, lines 57-65, col. 3, lines 31-44). It would have been obvious to one having ordinary skill in the art at the time of the invention to use the mill of Mazurkiewicz '649 in the system of Pennline et al. '021 in order to provide a comminuting device that is energy efficient and avoids the problems of wearing of the friction parts. Absent a proper showing of criticality or unexpected results, the process timing and size factors are considered to be parameters that would have been routinely optimized by one having ordinary skill in the art at the time of the invention in order to achieve a high adsorption efficiency.

11. Claims 1-3, 5-12 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammel et al. '368 taken together with Bhat et al. '323, and further in view of Mazurkiewicz '649.

12. Hammel et al. '368 teach a system for removing mercury from a fuel gas derived from coal combustion, comprising recycling a loaded sorbent that has been used for removing contaminants from the gas by washing, drying, comminuting, and reinjecting the treated sorbent into the gas stream (see figure 8, paragraphs 26, 27, 39-43, 50, 56, 57, 61, 80, 87, 92, 93). The

Art Unit: 1724

instant claims differ from the disclosure of Hammel et al. '368 in the same ways they differ from Pennline et al '021 as discussed in paragraph 8 above. The teachings of Bhat et al. '323 and Mazurkiewicz '649 are discussed in paragraphs 9 and 10 above. It would have been obvious to modify the system of Hammel et al. '368 in the same ways and for the same reasons given in paragraphs 9 and 10 above.

Allowable Subject Matter

13. Claims 28-32 and 34-36 are allowed.

14. Claim 33 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. The following is an examiner's statement of reasons for allowance: The prior art of record fails to disclose the steps of transporting a particulate unmilled sorbent material and coal from a remote location to a utility plant site, wherein the comminuting step occurs on-site with the plant in which the coal is combusted, in combination with the other method steps.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

16. Applicant's arguments filed September 29, 2006 have been fully considered but they are not persuasive. The rule 131 declaration is considered to be sufficient to overcome the prior art rejection over Chang et al. '043, which is now withdrawn as prior art. It is the examiner's

Art Unit: 1724

contention that a combination of the other cited patents disclose the instant invention. The rejections have been altered to address the amendments to claims 1 and 10 that incorporate the jet mill as a limitation.

17. Applicant argues that the Pennline et al. patent discloses the use of an intermediate storage hopper (52), however it is submitted that the use of the hopper is optional because of the language “may be stored” and “may be operated” in col. 4, lines 41-48.

18. Applicant also argues that the Hammel et al. patent says nothing about whether the comminuted sorbent particles are stored before introduction to the duct. The examiner agrees with this, however the absence of this teaching is not a disclosure of an intermediate storage step, or a teaching away from the system of the instant claims.

19. Applicant further argues that the Bhat et al. patent teaches intermediate storage of the milled sorbent, however the Bhat et al. patent is only used for its motivation to use a plurality of nozzles in the sorbent distribution section rather than combining the sorbent storage unit with the primary references.

20. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the particulars of the jet mill not disclosed by the Mazurkiewitz patent) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1724

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Frank M. Lawrence
Primary Examiner
Art Unit 1724

fl

Frank Lawrence
10-23-06